

**AMENDMENTS TO THE CLAIMS**

Please amend the claims as follows.

1. (Currently Amended) A system for evaluating a simulation of a circuit design comprising:

a processor;

a reference simulator configured to generate golden data by executing ~~execute~~ a first simulation image using the processor to obtain golden data, wherein the first simulation image is [[a]] compiled from a first implementation version ~~version~~ of the ~~simulation~~ circuit design;

a test simulator configured to generate test data by executing ~~execute the~~ a second simulation image to obtain test data, wherein the second simulation image is compiled from a second implementation of the circuit design ~~test simulator is associated with a first implementation of the simulation design and the reference simulator is associated with a second implementation of the simulation design;~~  
and

a comparator configured to select a portion of the test data, use a mapping rule of a plurality of mapping rules to identify a portion of the golden data associated with the portion of the test data, and generate a comparison result by comparing [[a]] the portion of the golden data to the [[a]] portion of the test data before the execution of the second simulation image on the test simulator has completed,

~~wherein user data is used by the comparator to select the portion of the golden data and the portion of the test data, wherein the user data comprises the~~ [[a]] plurality of mapping rules used by the comparator to map an internal hierarchy of the first implementation of the simulation design to an internal hierarchy of the second implementation of the simulation design, and

~~wherein the comparison result is used to debug at least one selected from a group of the~~ simulation circuit design and the test simulator, by correcting and displaying an error detected in the comparison result.

2. (Currently Amended) The system of claim 1 further comprising:

a golden data repository storing the golden data [[;]] ~~and~~

~~a compiler configured to generate the simulation image by compiling the simulation design and user data.~~

3. (Original) The system of claim 1, wherein comparing the portion of the golden data to the portion of the test data occurs dynamically.
4. (Original) The system of claim 3 further comprising:  
a buffer to store the golden data.
5. (Original) The system of claim 4, wherein the comparator is configured to wait to compare the portion of the golden data to the portion of the test data until after the golden data is stored in the buffer.
6. (Cancelled)
7. (Cancelled)
8. (Currently Amended) The system of claim 1 ~~[[7]]~~, wherein the mapping rule ~~user data~~ is obtained while the test simulator is halted.
9. (Cancelled)
10. (Cancelled)
11. (Currently Amended) A method of evaluating a simulation of a circuit design comprising:  
executing a first simulation image on a reference simulator to obtain golden data,  
wherein the first simulation image is obtained by compiling a first implementation of the circuit ~~simulation~~ design;  
executing ~~[[the]]~~ a second simulation image on a test simulator to obtain test data,  
wherein ~~[[the]] test simulator is associated with a first implementation of the~~  
second simulation image is obtained by compiling ~~design and the reference simulator is associated with~~ a second implementation of the circuit ~~simulation~~ design;  
selecting ~~a portion of the golden data and~~ a portion of the test data;

using a mapping rule of a plurality of mapping rules to identify a portion of the golden data associated with the portion of the test data; and  
comparing the ~~selected~~ portion of the golden data to the ~~selected~~ portion of the test data to obtain a comparison result,  
wherein ~~user data is used to select the portion of the golden data and the portion of the test data, wherein the user data comprises~~ [[a]] the plurality of mapping rules used to map an internal hierarchy of the first implementation of the simulation design to an internal hierarchy of the second implementation of the simulation design, and  
wherein the comparison result is used to debug at least one selected from a group of the simulation design and the test simulator, by correcting and displaying an error detected in the comparison result.

12.— 14. (Cancelled)

15. (Original) The method of claim 11 further comprising:  
storing the golden data in a golden data repository.

16. (Cancelled)

17. (Cancelled)

18. (Original) The method of claim 11, wherein the step of comparing the selected golden data to the selected test data waits on storing the golden data in a buffer.

19. (Currently Amended) The method of claim 11, wherein the step of selecting [[a]] the portion of the test data is performed dynamically.

20. (Cancelled)

21. (Cancelled)

22. (Currently Amended) The method of claim 11 ~~[[21]]~~, wherein the step of executing the second simulation image is halted to obtain ~~user data~~ the mapping rule.

23. (Cancelled)

24. (Cancelled)

25. (Currently Amended) A computer system for evaluating a simulation of a circuit design comprising:

- a processor;
- a memory;
- a storage device; and

software instructions stored in the memory for enabling the computer system to:

- execute a first simulation image on a reference simulator to obtain golden data, wherein the first simulation image is obtained by compiling a first implementation of the circuit simulation design;

- execute ~~[[the]]~~ a second simulation image on a test simulator to obtain test data, wherein ~~[[the]] test simulator is associated with a first implementation of the~~ second simulation image is obtained by compiling ~~design and the reference simulator is associated with~~ a second implementation of the circuit simulation design;

- select ~~a portion of the golden data and~~ a portion of the test data;

- use a mapping rule of a plurality of mapping rules to identify a portion of the golden data associated with the portion of the test data; and

- compare the ~~selected~~ portion of the golden data to the ~~selected~~ portion of the test data to obtain a comparison result,

- wherein ~~user data is used to select the portion of the golden data and the portion of the test data, wherein the user data comprises [[a]] the plurality of mapping rules used to map an internal hierarchy of the first implementation of the simulation design to an internal hierarchy of the second implementation of the simulation design, and~~

- wherein the comparison result is used to debug at least one selected from a group of the simulation design and the test simulator, by correcting and displaying an error detected in the comparison result.

26. (Cancelled)

27. (Cancelled)

28. (Currently Amended) An apparatus for evaluating a simulation of a circuit design comprising:

means for executing a first simulation image on a reference simulator to obtain golden data, wherein the first simulation image is obtained by compiling a first implementation of the circuit simulation design;

means for executing ~~[[the]]~~ a second simulation image on a test simulator to obtain test data, wherein ~~the test simulator is associated with a first implementation of the second simulation image~~ is obtained by compiling ~~design and the reference simulator is associated with a second implementation of the circuit simulation~~ design;

means for selecting ~~a portion of the golden data and a portion of the test data; [[and]]~~

means for using a mapping rule of a plurality of mapping rules to identify a portion of the golden data associated with the portion of the test data; and

means for comparing the ~~selected~~ portion of the golden data to the ~~selected~~ portion of the test data to obtain a comparison result,

~~wherein user data is used to select the portion of the golden data and the portion of the test data, wherein the user data comprises [[a]] the plurality of mapping rules used to map an internal hierarchy of the first implementation of the simulation design to an internal hierarchy of the second implementation of the simulation design,~~  
and

wherein the comparison result is used to debug at least one selected from a group of the simulation design and the test simulator, by correcting and displaying an error detected in the comparison result.

29. (Cancelled)

30. (Cancelled)

31. (New) The system of claim 1, wherein the test simulator executes the second simulation image in lockstep.

- 32. (New) The system of claim 1, wherein the reference simulator executes the first simulation image in lockstep.
- 33. (New) The system of claim 1, wherein the portion of the test data is generated after the golden data is generated.
- 34. (New) The method of claim 11, wherein the step of executing the first simulation image on the test simulator.
- 35. (New) The method of claim 11, wherein the step of executing the second simulation image on the reference simulator is performed in lockstep.
- 36. (New) The method of claim 11, wherein the portion of the test data is generated after the golden data is generated.
- 37. (New) The computer system of claim 25, wherein the test simulator executes the second simulation image in lockstep.
- 38. (New) The computer system of claim 25, wherein the reference simulator executes the first simulation image in lockstep.
- 39. (New) The computer system of claim 25, wherein the portion of the test data is generated after the golden data is generated.